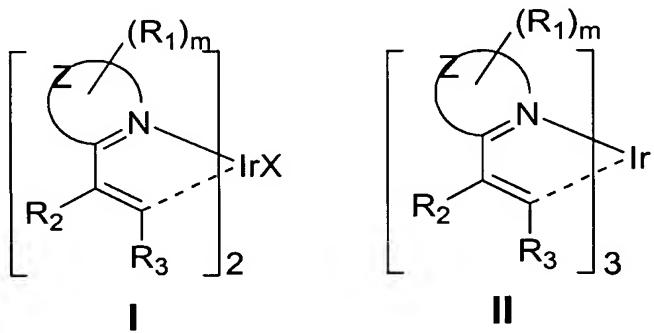


Appl. No. 10/822,647
Amendment dated: June 14, 2007
Reply to OA of: March 14, 2007

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1(currently amended). An organic light emitting diode (OLED) comprising: an anode on a substrate, an electroluminescent medium on said anode, and a cathode on said electroluminescent medium, characterized in that said electroluminescent medium comprises a light emitting layer comprising a phosphorescent Ir complex having the following structures (I) or (II):



wherein X is an arbitrary monoanionic bidentate ligand;

Z is an arbitrary atomic moiety capable of forming a nitrogen-containing heterocyclic group;

R_1 is selected from the group consisting of H, halogen, C1-C6 alkyl, halogen-substituted C1-C6 alkyl, C1-C6 alkoxy, phenyl C1-C6 alkyl, amino, and aryl;

m is 0 or any positive integer determined by the ring size of said nitrogen-containing heterocyclic group;

R_2 is selected from the group consisting of H, halogen, C1-C6 alkyl, halogen-substituted C1-C6 alkyl, C1-C6 alkoxy, phenyl C1-C6 alkyl, amino, aryl, and heterocyclic aryl; and

R_3 is aryl or heterocyclic aryl;

Appl. No. 10/822,647
Amendment dated: June 14, 2007
Reply to OA of: March 14, 2007

and provided that said nitrogen-containing heterocyclic group containing said Z moiety is not pyridine, quinoline or isoquinoline.

2(previously presented). The OLED as claimed in Claim 1, wherein said aryl is phenyl, naphthyl, diphenyl, anthryl, pyrenyl, or phenanthryl; said heterocyclic aryl is benzofuran or thiophene.

3(previously presented). The OLED as claimed in Claim 1, wherein said nitrogen-containing heterocyclic group is pyrazine, pyrimidine, pyrrole, pyrazole, imidazole, indole, thiazole, isothiazole, oxazole, isoxazole, benzothiazole, benzoxazole, or phenanthroline.

4(previously presented). The OLED as claimed in Claim 1, wherein R_2 is H or methyl; and R_3 is aryl group.

5(previously presented). The OLED as claimed in Claim 4 wherein R_3 is phenyl or naphthyl.

6(currently amended). The OLED as claimed in Claim 1, wherein said phosphorescent Ir complex has the structures structure (I), and X is acetylacetone, aminoacid, salicylaldehyde, or iminoacetone.

7(original). The OLED as claimed in Claim 6, wherein X is acetylacetone.

8(canceled).

9(original). The OLED as claimed in Claim 1, wherein said light emitting layer will emit yellow to red light, when a voltage is applied on said anode and said cathode.

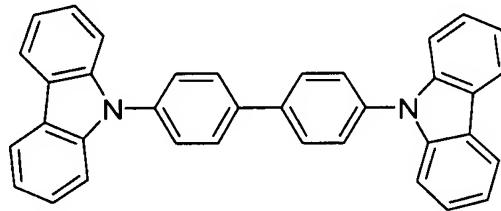
10(original). The OLED as claimed in Claim 1, wherein said light emitting layer

further comprises a host compound, and said Ir complex is doped into said host compound.

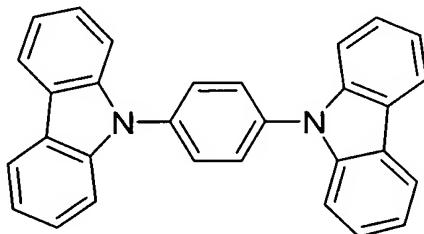
11(original). The OLED as claimed in Claim 10, wherein said host compound is a compound having a hole transporting capability.

12(original). The OLED as claimed in Claim 10, wherein said host compound is a compound having an electron transporting capability.

13(currently amended). The OLED as claimed in Claim 11, wherein said compound having a hole transporting capability is:

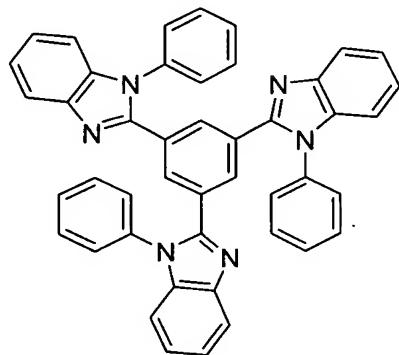


14(currently amended). The OLED as claimed in Claim 11, wherein said compound having a hole transporting capability is:



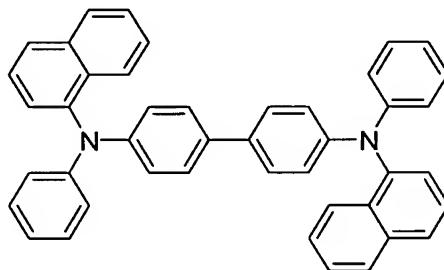
Appl. No. 10/822,647
Amendment dated: June 14, 2007
Reply to OA of: March 14, 2007

15(currently amended). The OLED as claimed in Claim 12, wherein said compound having an electron transporting capability is:



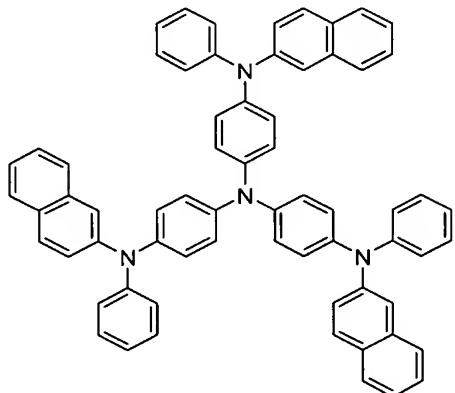
16(original). The OLED as claimed in Claim 1, wherein said electroluminescent medium further comprises a hole transporting layer between said anode and said light emitting layer.

17(currently amended). The OLED as claimed in Claim 16, wherein said hole transporting layer comprises a compound of the following structure:



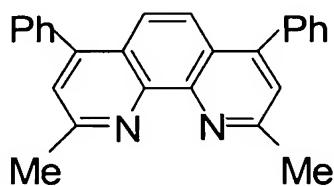
18(original). The OLED as claimed in Claim 16, wherein said electroluminescent medium further comprises a hole injection modification layer between said anode and said hole transporting layer.

19(currently amended). The OLED as claimed in Claim 18, wherein said hole injection modification layer comprises a compound of the following structure:



20(original). The OLED as claimed in Claim 1, wherein said electroluminescent medium further comprises a hole-blocking layer between said cathode and said light emitting layer, and said hole-blocking layer contacts said light emitting layer.

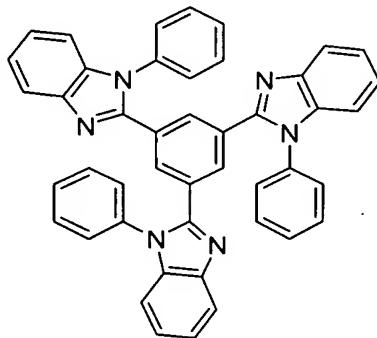
21(original). The OLED as claimed in Claim 20, wherein said hole-blocking layer comprises a compound of the following structure:



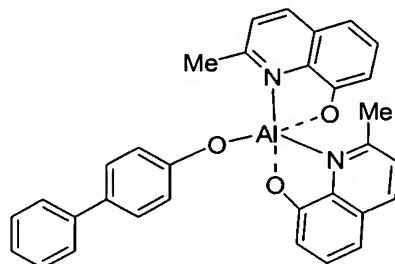
wherein Ph is phenyl, and Me is methyl.

Appl. No. 10/822,647
Amendment dated: June 14, 2007
Reply to OA of: March 14, 2007

22(currently amended). The OLED as claimed in Claim 20, wherein said hole-blocking layer comprises a compound of the following structure:



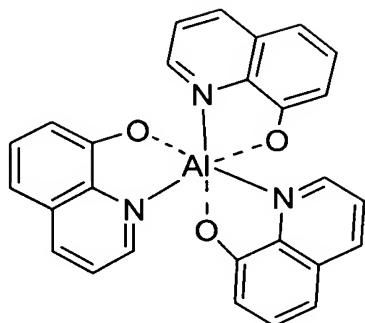
23(original). The OLED as claimed in Claim 20, wherein said hole-blocking layer comprises a compound of the following structure:



wherein Me is methyl.

24(original). The OLED as claimed in Claim 20, wherein said electroluminescent medium further comprises an electron transporting layer between said hole-blocking layer and said cathode.

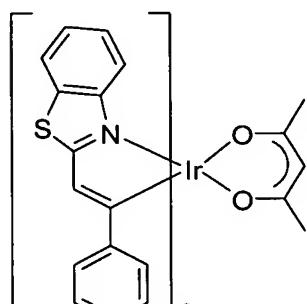
25(currently amended). The OLED as claimed in Claim 24, wherein said electron transporting layer comprises a compound of the following structure:



26(previously presented). The OLED as claimed in Claim 3, wherein said nitrogen-containing heterocyclic group is benzothiazole.

27(previously presented). The OLED as claimed in Claim 6, wherein X is aminoacid or salicylaldehyde.

28(currently amended). The OLED as claimed in Claim 1, wherein said phosphorescent Ir complex is



I-6